Atty. Dkt. No. 033337-0125

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: YU et al.

Title: TERMINALS HAVING SUB-BAND SUBSTITUTE SIGNAL CONTROL IN OPTICAL COMMUNICATION SYSTEMS

Appl. No.: Unassigned

Filing Date: August 28, 2001

Examiner: Unassigned

Art Unit: Unassigned

EXPRESS MAIL LABEL NO. EL 809 135 650 US

TRANSMITTAL OF FORMAL DRAWINGS

Commissioner for Patents
Washington, D.C. 20231

ATTENTION: DRAWING REVIEW BRANCH

Sir:

Transmitted herewith are the formal drawings (11 sheets, Figures 1-10(b)) for the above-identified application. The Official Draftsperson is respectfully requested to approve these drawings for entry into the application.

Respectfully submitted,

Date 8/28/01

By Johnny A. Kumar

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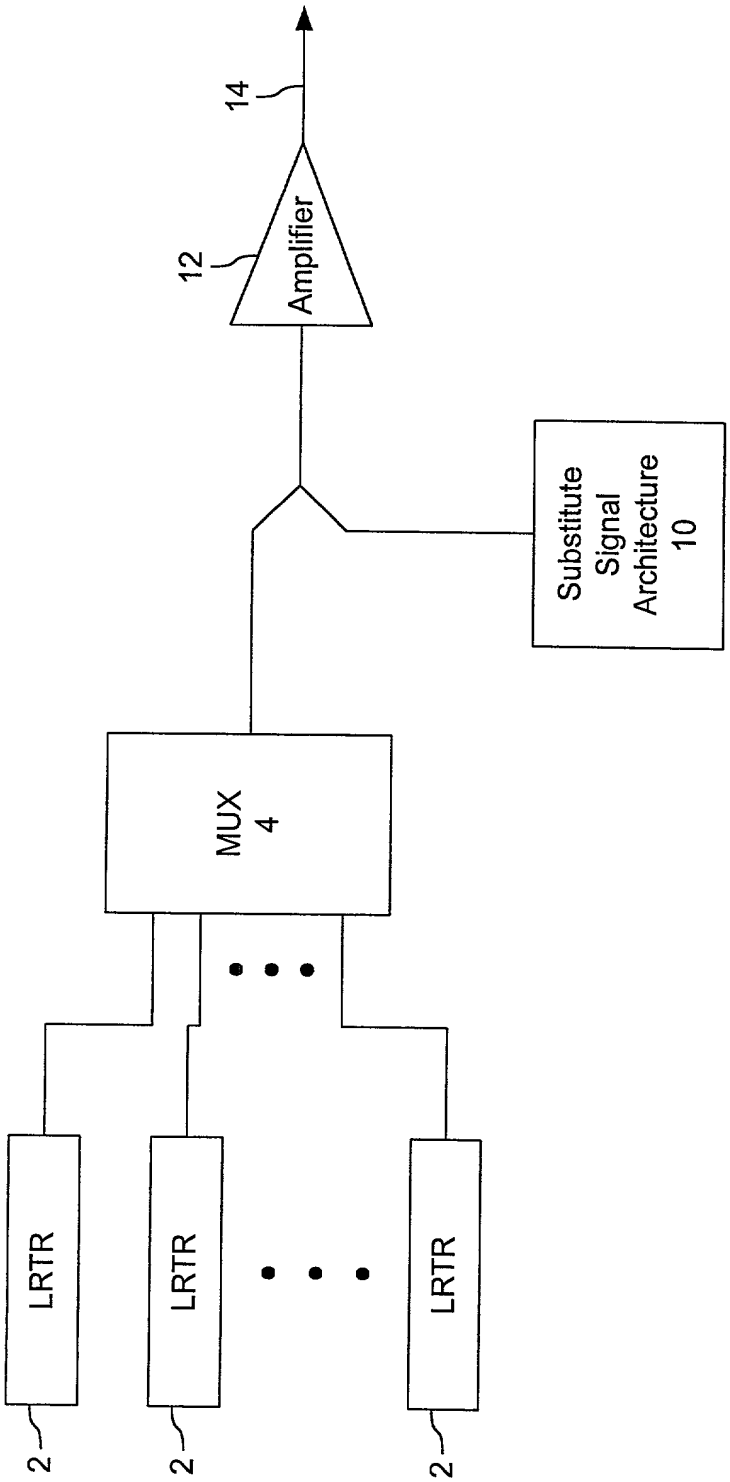
14
12
Amplifier
Substitute
Signal
Architecture
10
MUX
4
LRTR
LRTR
LRTR
2
2
2

FIG. 1(a)

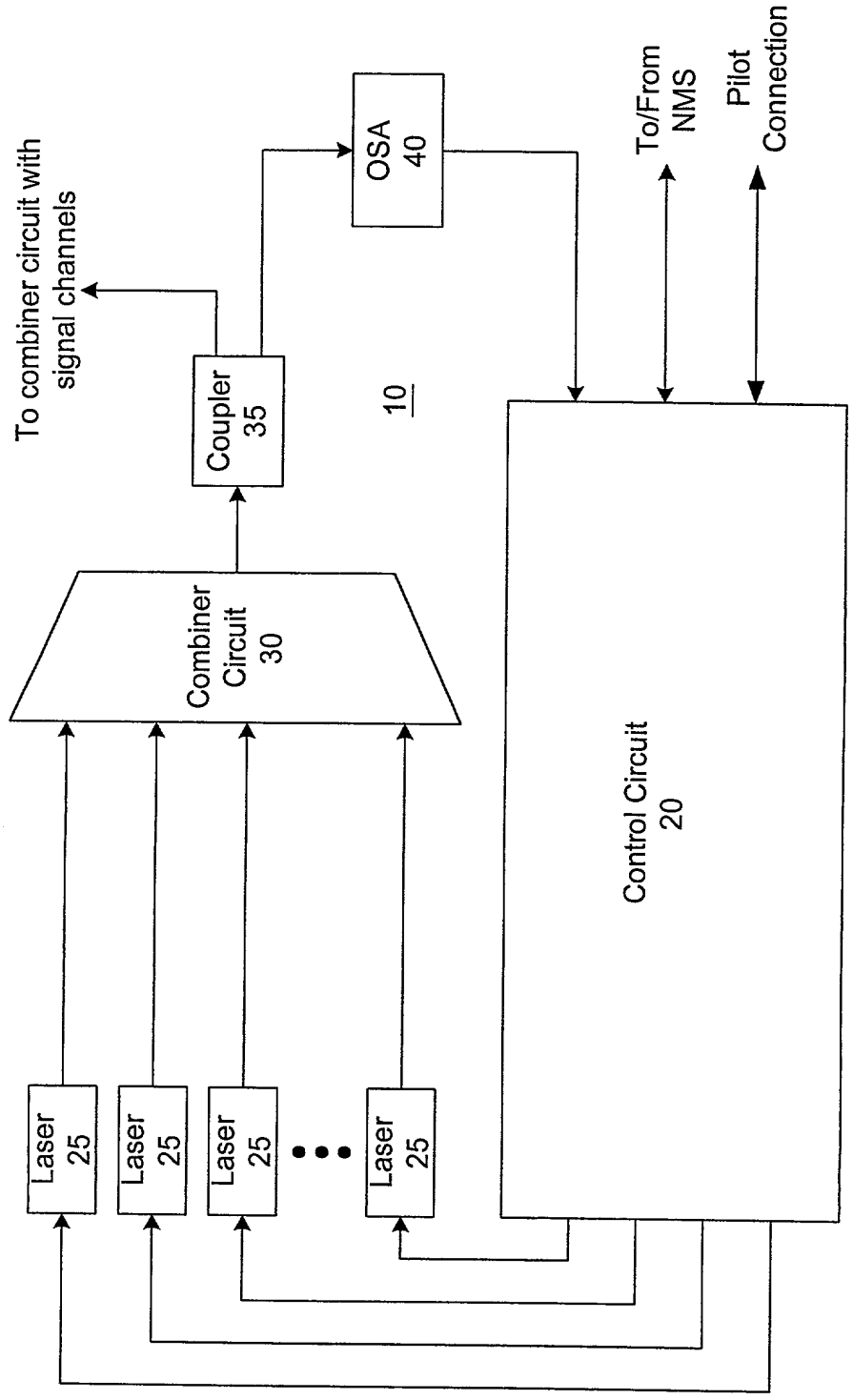
To combiner circuit with signal channels
OSA 40
To/From NMS
Pilot Connection
Coupler 35
10
Combiner Circuit 30
Control Circuit 20
Laser 25
Laser 25
Laser 25
Laser 25

FIG. 1(b)

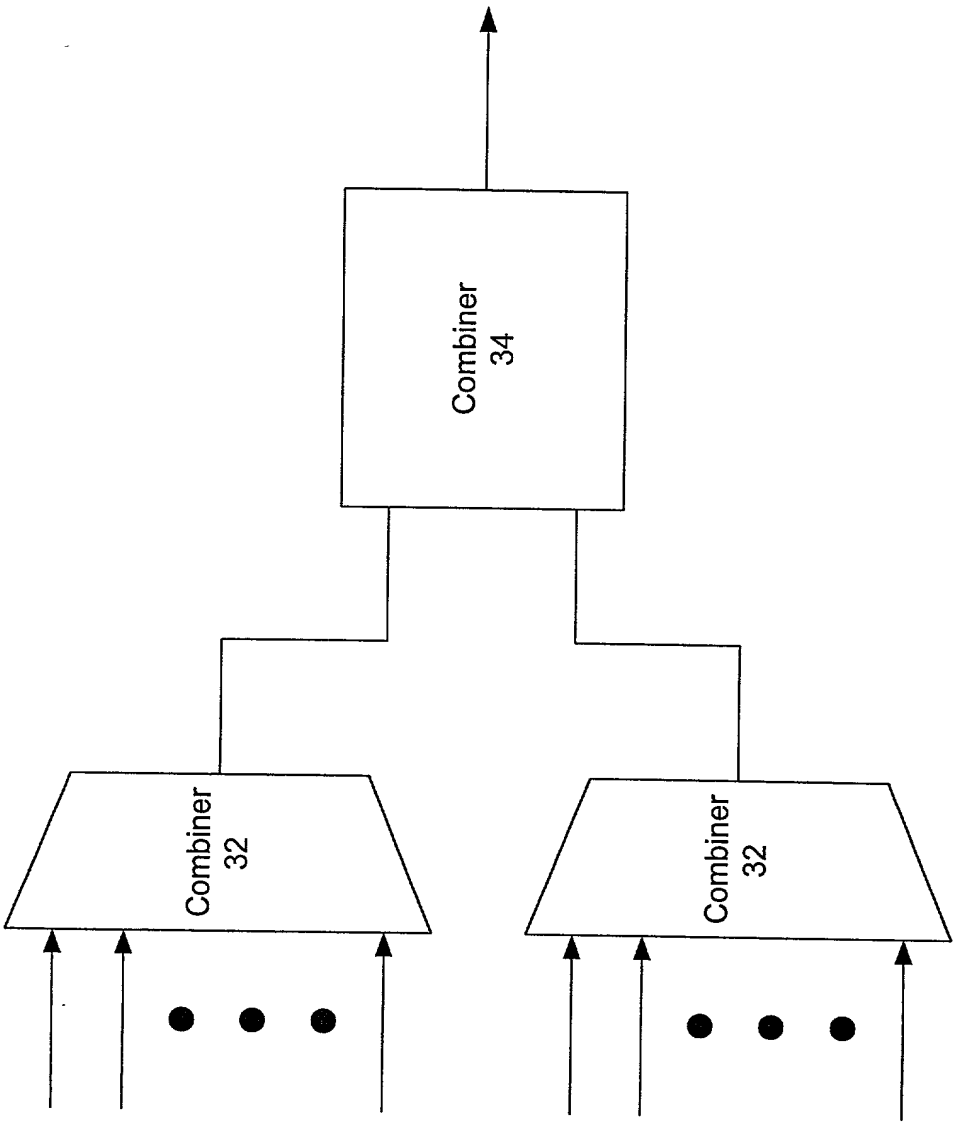

FIG. 2

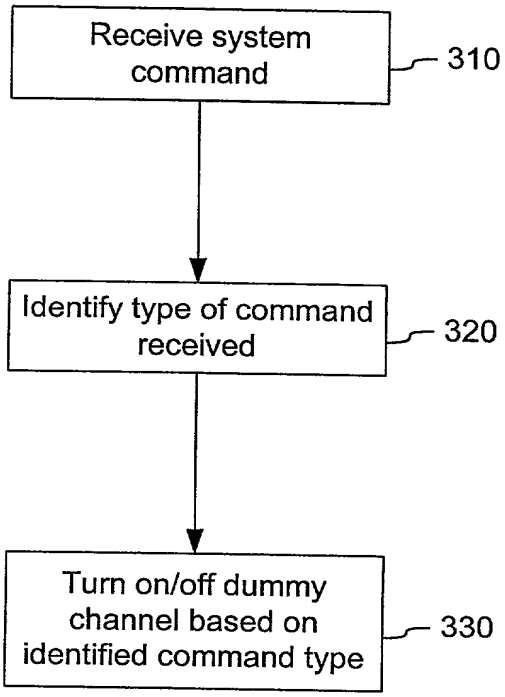

FIG. 3

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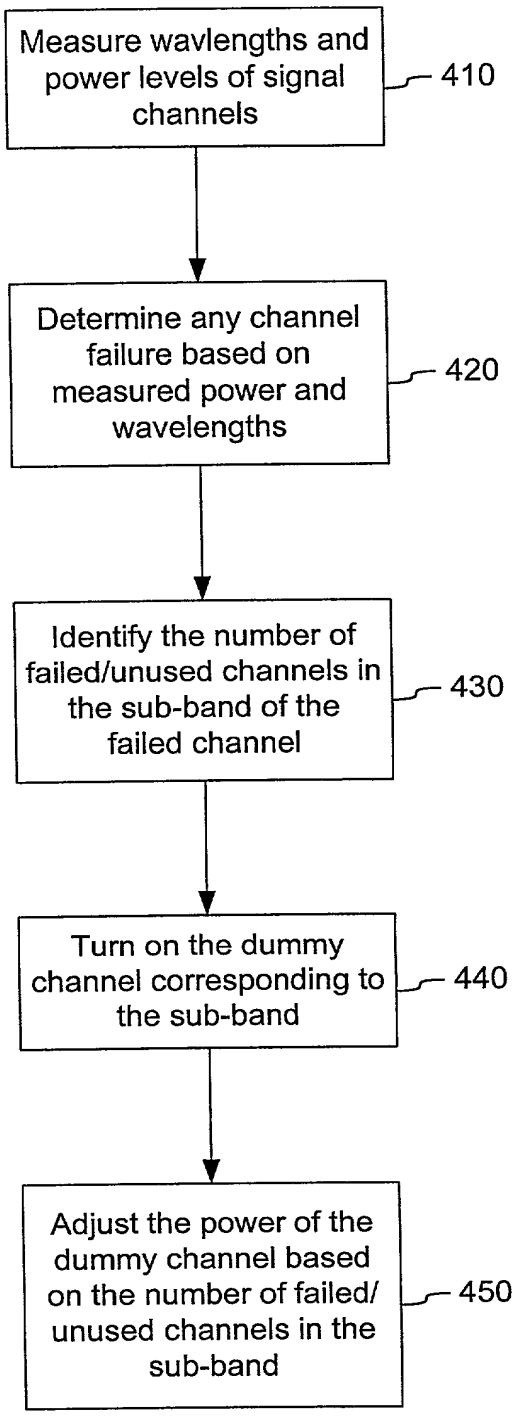
Measure wavlengths and power levels of signal channels
410
Determine any channel failure based on measured power and wavelengths
420
Identify the number of failed/unused channels in the sub-band of the failed channel
430
Turn on the dummy channel corresponding to the sub-band
440
Adjust the power of the dummy channel based on the number of failed/ unused channels in the sub-band
450

FIG. 4

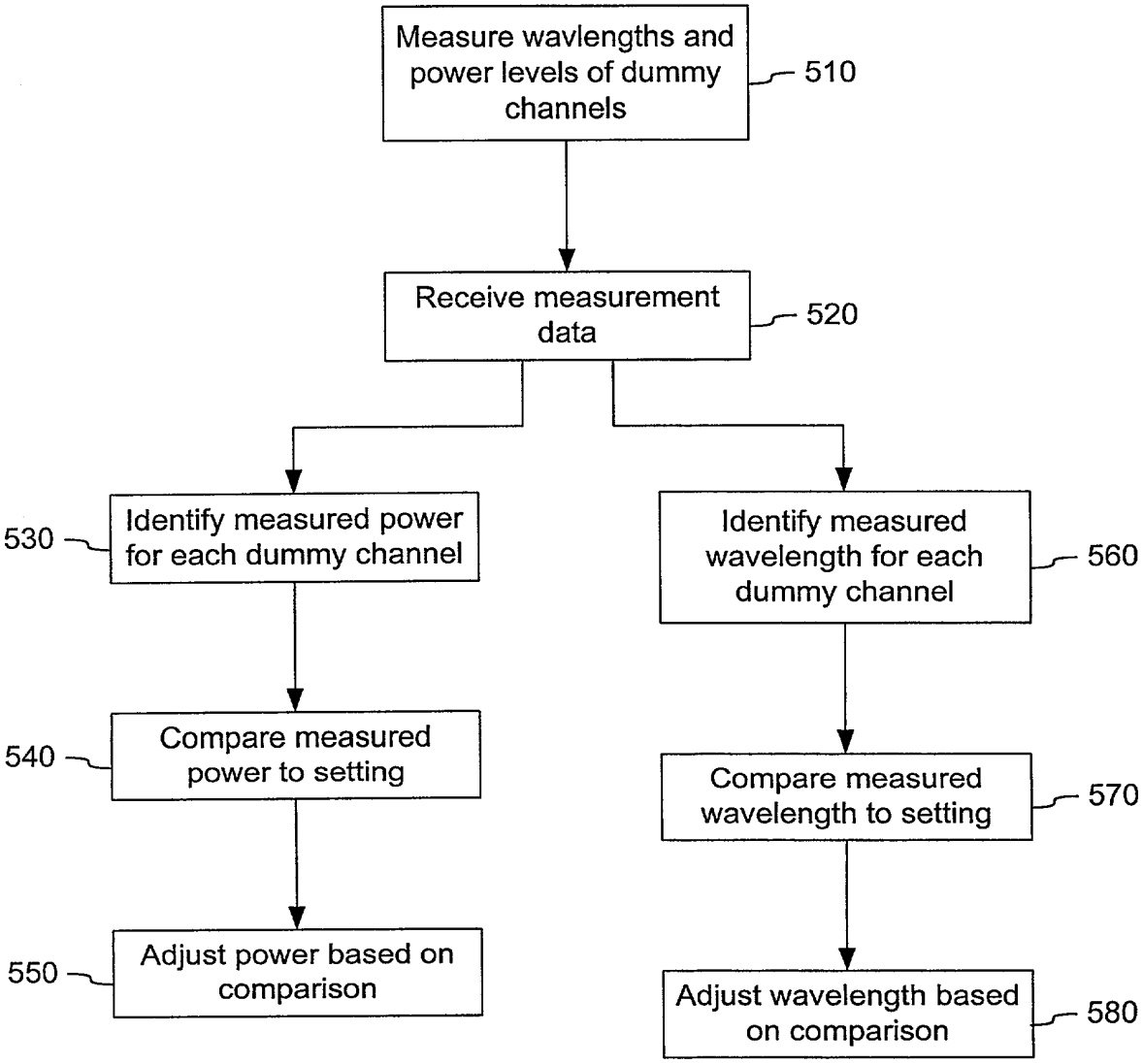
Measure wavlengths and power levels of dummy channels
510
Receive measurement data
520
530
Identify measured power for each dummy channel
540
Compare measured power to setting
550
Adjust power based on comparison
Identify measured wavelength for each dummy channel
560
Compare measured wavelength to setting
570
Adjust wavelength based on comparison
580

FIG. 5

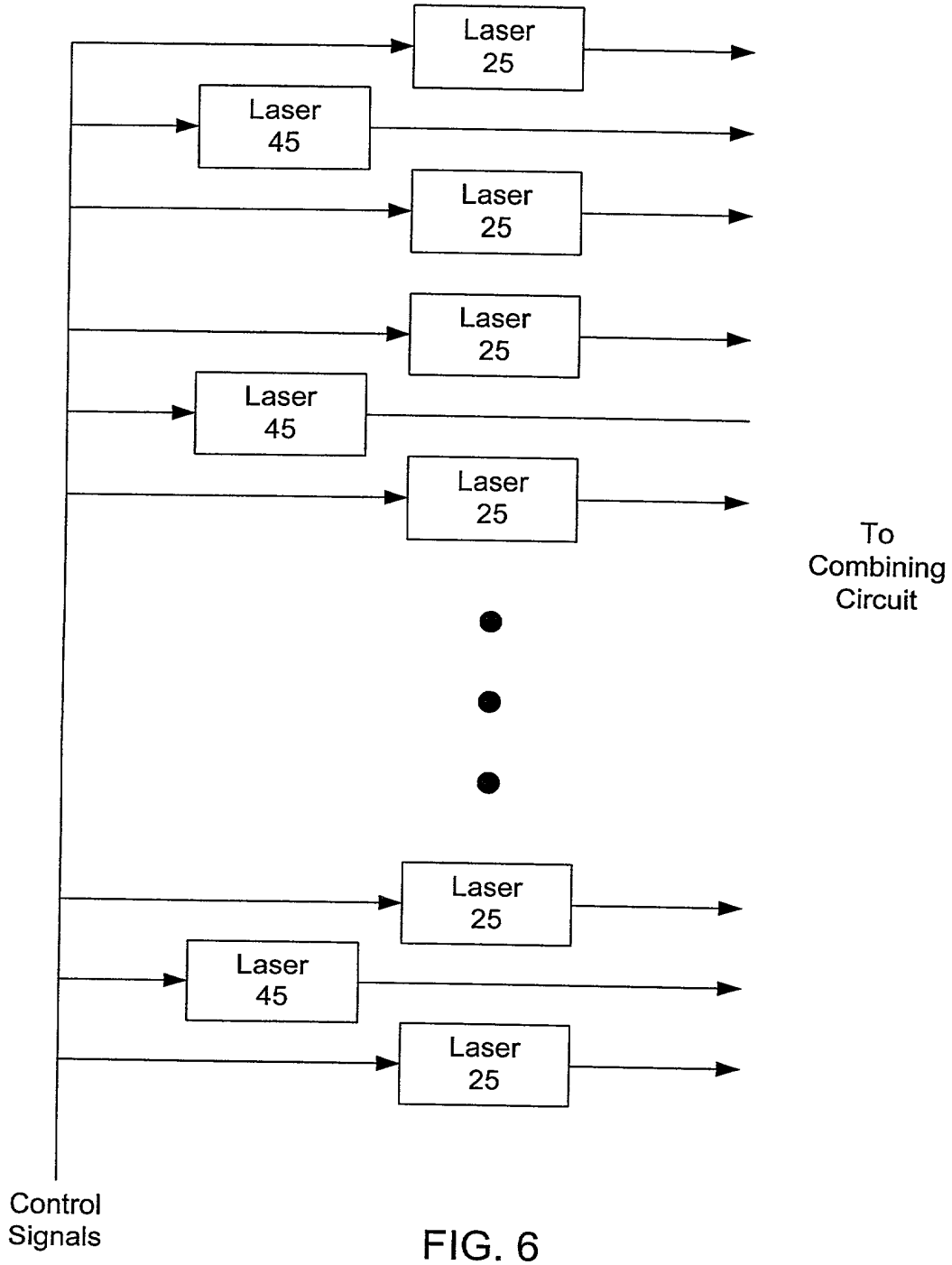
Laser
25
Laser
45
Laser
25
Laser
25
Laser
45
Laser
25
To
Combining
Circuit
Laser
25
Laser
45
Laser
25
Control
Signals

FIG. 6

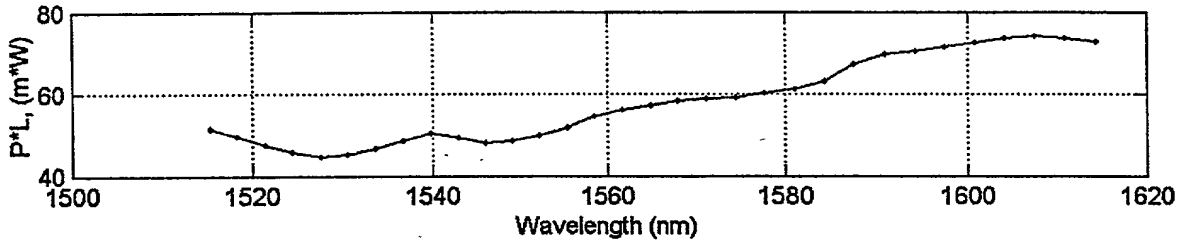
80
60
40
P*L, (m*W)
1500
1520
1540
1560
1580
1600
1620
Wavelength (nm)

FIG. 7 (a)

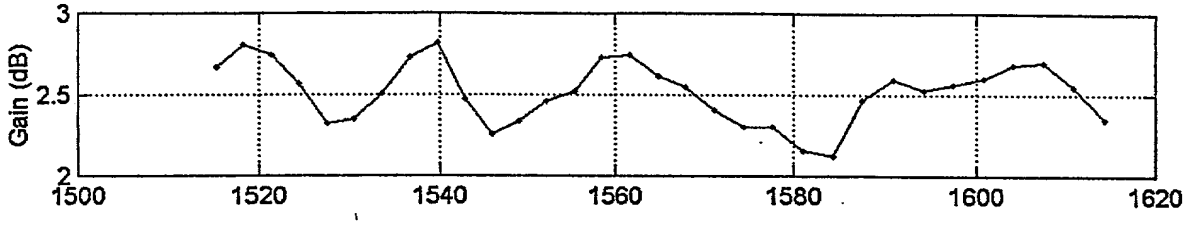
3
2.5
2
Gain (dB)
1500
1520
1540
1560
1580
1600
1620

FIG. 7 (b)

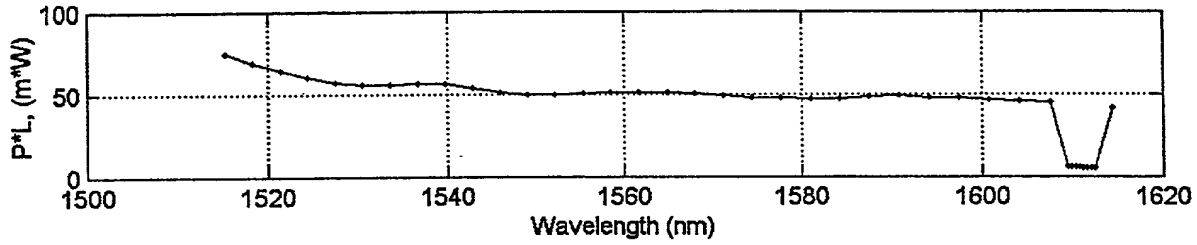
100
50
0
P*L, (m*W)
1500
1520
1540
1560
1580
1600
1620
Wavelength (nm)

FIG. 8 (a)

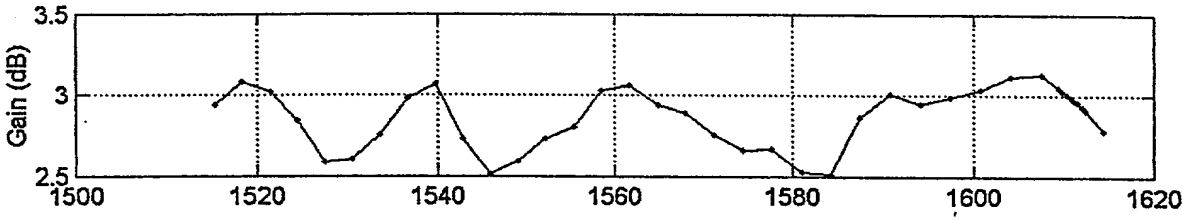
3.5
3
2.5
Gain (dB)
1500
1520
1540
1560
1580
1600
1620

FIG. 8 (b)

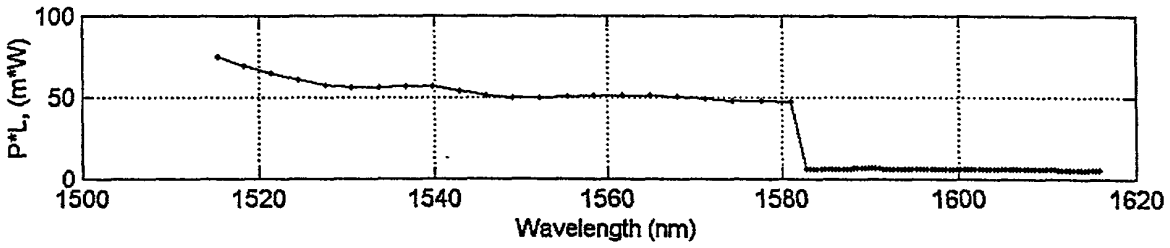
100
50
0
P*L, (m*W)
1500
1520
1540
1560
1580
1600
1620
Wavelength (nm)

FIG. 9 (a)

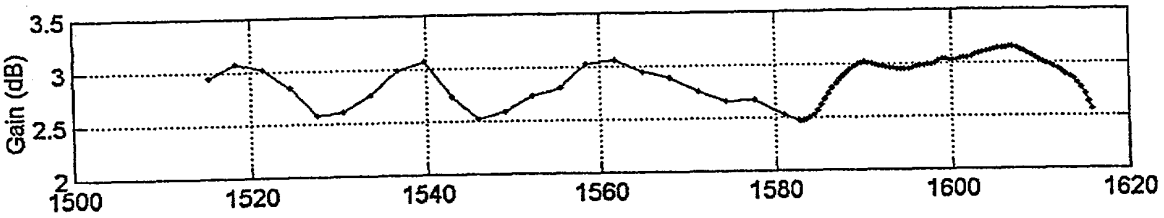
3.5
3
2.5
2
Gain (dB)
1500
1520
1540
1560
1580
1600
1620

FIG. 9 (b)

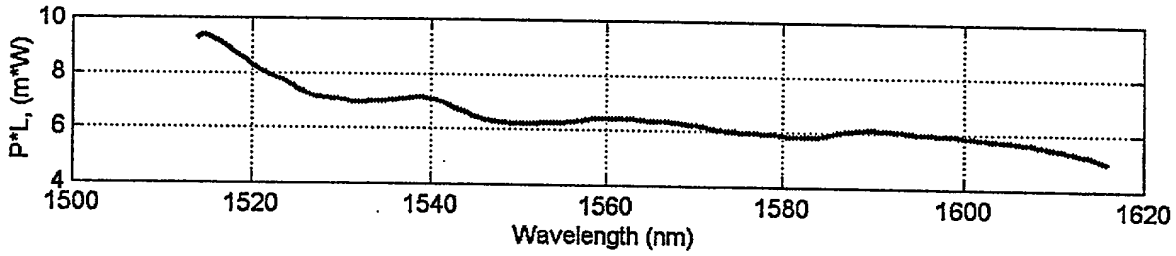

FIG. 10 (a)

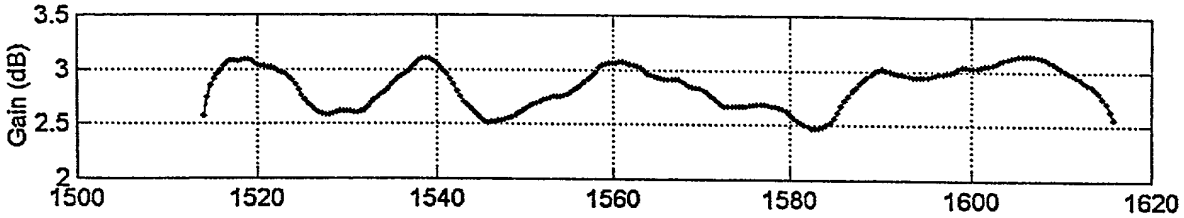

FIG. 10 (b)